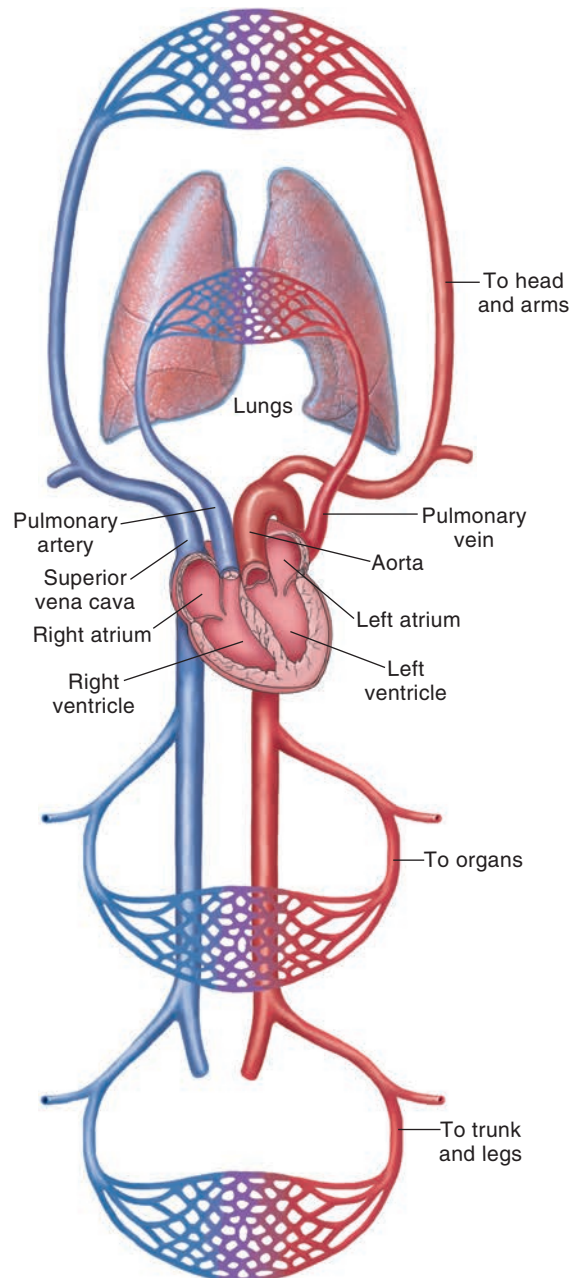


to the lungs via the pulmonary artery to obtain oxygen, which the heart and body tissues need to survive (Fig. 16-2). This oxygen-rich blood is then returned to the heart via the pulmonary veins. This sequence is known as the **pulmonary circulation**. The oxygenated blood is then sent out to the upper and lower parts of the body via the aorta, which subdivides into a system of arteries. Finally, the blood, which is now depleted of oxygen and rich in carbon dioxide, returns from the body to the heart via a network of veins, where it again is pumped to the lungs to exchange the carbon dioxide for more oxygen in a never-ending cycle.

The cardiovascular system plays two major roles in the human body. One is to deliver much-needed nutrients such as oxygen, hormones, and immune and clotting factors to every part of the body including the heart. The other role is to carry waste products such as carbon dioxide out of the cells. If any area of this system is damaged through accident or disease, the effects on health can be devastating.



**FIGURE 16-2:** Cardiopulmonary circulation. The red blood vessels represent oxygen-rich blood, and the blue blood vessels represent oxygen-poor blood.